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CONTENTS

NOTES AND EXHIBITION SCHEDULE 2

A SOUMAK-WOVEN RUG IN A 15TH CENTURY INTERNATIONAL STYLE.
Charles Grant Ellis 3

PRINCIPLES OF TEXTILE CONSERVATION SCIENCE, NO. III.
CLASSIFICATION OF FIBERS FOUND IN ANCIENT TEXTILES. *James W. Rice* 21

TIAHUANACO TAPESTRY DESIGN. *Alan R. Sawyer* 27

HORSEMEN IN TAPESTRY ROUNDELS FOUND IN EGYPT. *Rudolf Berliner* 39

PRINCIPLES OF TEXTILE CONSERVATION SCIENCE, NO. IV.
THE CONSERVATION OF HISTORICAL TEXTILE COLORANTS. *James W. Rice* 55

THE PAST AND FUTURE OF THE TEXTILE MUSEUM 62

CHARTER MEMBERS OF THE TEXTILE MUSEUM 63

BOARD OF TRUSTEES AND STAFF 64

All drawings by Milton Franklin Sonday, Jr. in collaboration with the authors.

TIAHUANACO TAPESTRY DESIGN

ALAN R. SAWYER

Issued simultaneously as special paper Number Three of The Museum of Primitive Art

INTRODUCTION

The people in ancient Peru excelled in the textile arts for over four thousand years before the arrival of their Spanish conquerors. From the infinite variety of weaving techniques and art styles to be seen in fabrics surviving in desert cemeteries from this time no group is more outstanding for its consistent high quality than the finely woven interlocking tapestry shirts from the period of the Tiahuanaco Empire (about A.D. 600 to 1100). The dramatic designs and striking color harmonies of these tapestries have made them one of the most universally admired and sought after types of hand woven textiles.

It is unfortunate that the popularity enjoyed by these fine weavings is not matched by our archaeological knowledge of the period which produced them. Partly for this reason there has been little written that contributes to our better understanding of the fabrics themselves. It is hoped that, in the not too distant future, the Textile Museum staff may be able to help fill this gap with a definitive stylistic and technical study based on the museum's extensive and important Tiahuanaco collection together with examples in other institutions. In this short paper I will attempt to sketch some of the broader aspects of the subject with special attention to the problems of establishing a relative chronology based on a theoretical reconstruction of stylistic evolution.

Provenience

Of the several hundred Tiahuanaco tapestry shirts in public and private collections, the number which has been scientifically excavated or which come to us with reliable provenience and associated data is pitifully small. Nearly all of these derive from the Coastal cemeteries of Peru, especially from the South Coast Nazca area where conditions for textile preservation are most favorable. It is not unreasonable to speculate that at least a few of the many remaining undocumented pieces were found elsewhere in the wide area once covered by the Tiahuanaco empire, which includes most of Peru, Bolivia and Northern Chile.

Taken as a group, what is most remarkable about these weavings is that in spite of an apparently wide distribution they evince surprisingly little variation in technique or design content. Some slight regional differences may be indicated, but the principal variations would seem to be temporal, reflecting stages in several centuries of an evolving art tradition.

Construction

Tiahuanaco tapestry shirts consist of two matching pieces woven in alpaca wool on looms averaging around 80 inches in width with a warp, usually cotton, about 22 inches long. One warp selvage of the finished piece almost always consists of chained warp loops, while on the other end, presumably the last woven, the warps were cut and diagonally interworked. In assembling the garment the two pieces were doubled in the weft direction and the chained selvages bound together to form a center seam leaving a gap for the neck slit. The interworked selvages were similarly joined at the outer edges except for arm holes left at the shoulder. The result was a simple garment roughly 40 inches square with the wefts running the length of the garment and the warps, the width (see Figure 7). When worn, it covered the entire torso and upper arms and hung down to below the knees.

Tradition

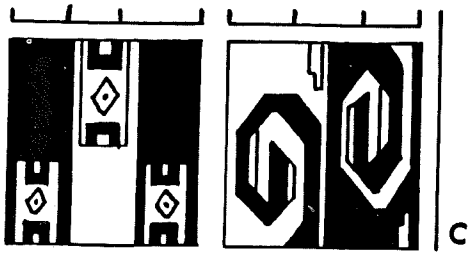
The unusual weaving tradition manifested in the structure of these shirts is not one found on the Coast of Peru prior to the Tiahuanaco occupation. It contrasts markedly with the regional techniques used in weaving "Coastal Tiahuanaco" textiles found in the same cemeteries and often in the same graves. It appears logical to conclude that the Tiahuanaco tapestry shirt reflects a distinctive and long established Highland weaving tradition. It is quite possible that it was a garment worn only by officials of the Tiahuanaco Empire and made only in highland centers or by weavers imported from those areas. It is interesting to note that the official garments of the later Inca Empire, which borrowed much from the Tiahuanaco culture, were woven on similar wide looms, the chief difference being that Inca shirts were woven in one piece with the neck slit accomplished by means of scaffolding wefts.

Iconography

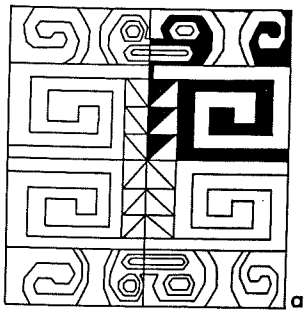
The iconography of Tiahuanaco tapestries is surprisingly limited. Repetitions of a single motif usually form the entire ornamentation of an individual garment. The range of motifs may be broken down into three main types, each consisting of two or more categories. They are outlined below in the order of the frequency of their occurrence with illustrations of typical examples of each major variation, except for Type III-A adequately demonstrated elsewhere in this paper.

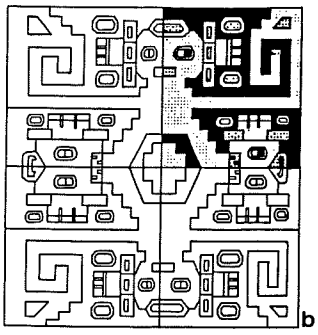
It seems probable in view of known Inca practice that each distinctive design in the rigid Tiahuanaco

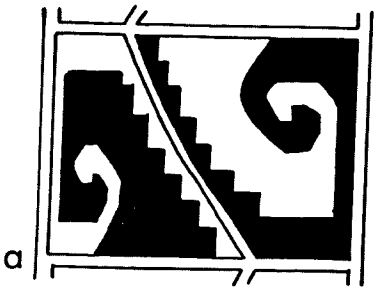
TYPE I PAIRED ELEMENTS. *(A) Stepped spirals of opposing orientation are paired within a rectangle and divided by a diagonal. Alternate registers reverse direction. (B) Stepped spirals are paired with stylized profile human or feline heads. Orientation is alternated as in A. (See also Figure 7-a). (C) Two different paired elements are alternated in checkerboard fashion. One is often Type A or B, while the other is usually made up of vertical bars terminating in stylized heads (as in example shown) or a stepped diamond.*

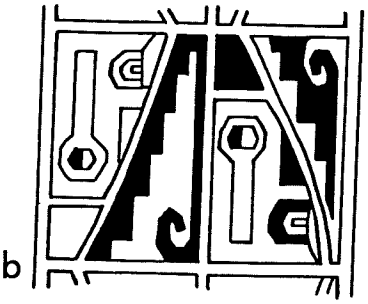


TYPE II COMPOSITE MOTIFS. *These appear to be figure motifs altered by the substitution of symbolic elements such as spirals and stylized heads for some of their natural components. The resulting composites (shaded in our illustrations) are repeated in four orientations around a central point. (A) Profile Feline (puma?) heads facing each other along the central axis suggest a frontal human face. The motif may be a feline figure much altered by substitution. (See also Figure 7-b) (B) Profile Bird (falcon?) and sometimes human heads oppose each other along the vertical and, often, the horizontal axis. The motif appears to be a substitution-altered bird figure which may be related to the eye patterns found on Type III figures.*

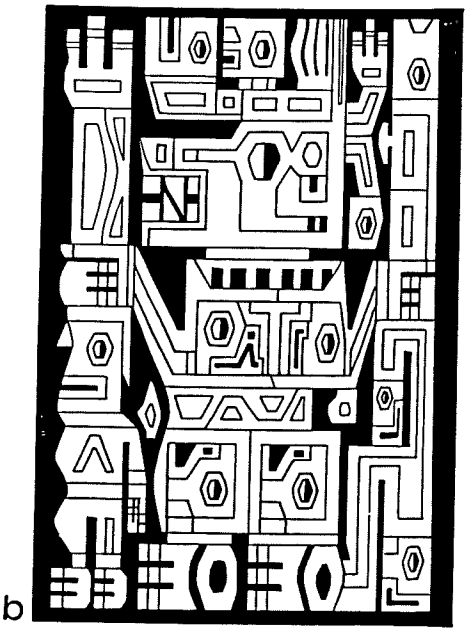








TYPE III STAFF BEARING FIGURES. *These are closely related to those found in low relief on the stone "Gateway of the Sun" at Tiahuanaco, Bolivia, and other Highland Tiahuanaco monuments. (A) Winged anthropomorphic figures with puma, falcon, human and, rarely, other type heads. The profile figures hold a staff to the front and the legs are shown in a running position. (See Figures 1 through 4 and 7-c) (B) Similar anthropomorphic figures without wings which hold staffs in each hand. They are usually shown in a standing position.*



iconography outlined above was the property of a specific rank of governmental or religious functionary. The simpler and more common of these motifs would appear to have been the emblems of the more numerous officials of lower rank, while the elaborate and the more rarely encountered designs signified officials of high status. Space does not permit our detailed discussion of this iconography though we will presently examine in more detail some characteristic motifs of Type III. First we should examine briefly the design organization of Tiahuanaco shirts, which is even more rigidly limited than their iconography.

Design Organization

Tiahuanaco shirts are always of extremely formal centrally balanced design (see Figure 7). Motifs are organized in vertical columns which are aligned horizontally by register. In the majority of cases we find one or two or three vertical bands of motifs (which in Type I may be up to three columns wide) separated by plain weft stripes on each half of the shirt front. A partial band of motifs is found along the side seam in addition to the one or more full bands. In a variant of this scheme, found in Types I and II, the registers in the upper half to two-fifths of the shirt are filled solidly with motifs, eliminating the plain stripes in that portion. A few shirts of Type III are entirely covered with columns of motifs with two different figures alternated. Exceptions to these limited ranges of iconography and design scheme are extremely rare. When found, they usually exhibit other departures from the strict conventions which govern the main group. These cases may represent rare survivals of weaving centers not fully subject to centralized Tiahuanaco control. On the other hand, they may represent a late period during which central Tiahuanaco authority was breaking down.

Chronology

While it is impossible at this time to establish a stylistic chronology for Tiahuanaco tapestery substantiated by archaeological data, it may prove useful to propose a relative one based on stylistic analysis. This assumes that stylization of figures evolved from easily identifiable motifs bearing close resemblance to their Highland Tiahuanaco prototypes through successive stages of simplification and geometricization of component elements, and a growing application of a distortion convention peculiar to Tiahuanaco tapestry. I propose to demonstrate the application of this hypothesis through a discussion of a selected group of tapestry designs representative of Type III-A, the important staff bearing figure category of motif.

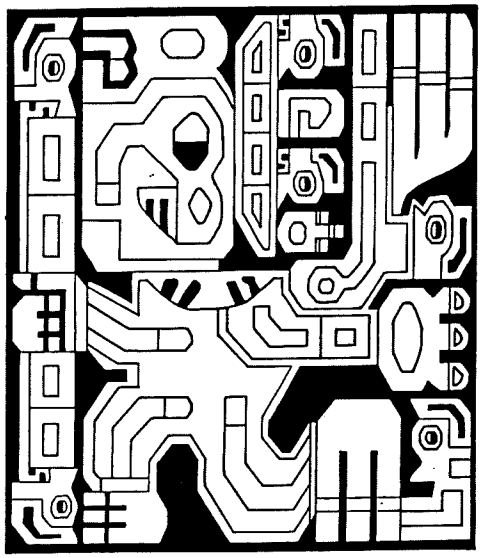
Conventionalization and Distortion

Most Tiahuanaco tapestry designs display, to a greater or lesser degree, distortion effected by the device of lateral expansion of those elements of the motif which lie towards the center of the garment and compression of those nearest the side hem. In addition, both bands and stripes become progressively narrower as they approach the side seams. The degree to which this distortion is carried usually becomes more pronounced in direct relationship to the extent to which the motif is stylized. Let us examine a series of related Type III-A motifs which demonstrate this principle. In Figure 1-a, we see a falcon-headed staff bearing figure as it appears in low relief on the "Gateway of the Sun." (The falcon identification is based on its beak shape and eye markings.) In the tapestry version 1-b, a somewhat simplified rendering of the same motif is depicted with little change in the relationship of its component elements other than that necessary to make the figure conform easily to the warp and weft of the fabric. It has been drawn from a vertical band in which the figures alternately face left and right (Figure 2) as is often the case in tapestries employing this class of motifs. A comparison reveals that the figures above and below the one illustrated display a little expansion of the wing, tail and foot appendage elements which lie closest to the center of the garment, while the staff, appearing now on the left towards the outer edge of the garment, is slightly more compressed than when the motif faces inward. Since the amount of compression and expansion is small, there is little distortion of motif in relation to its prototype on the "Gateway of the Sun." While our convention can be seen to have already been established, this version would appear to show an early stage of its development.

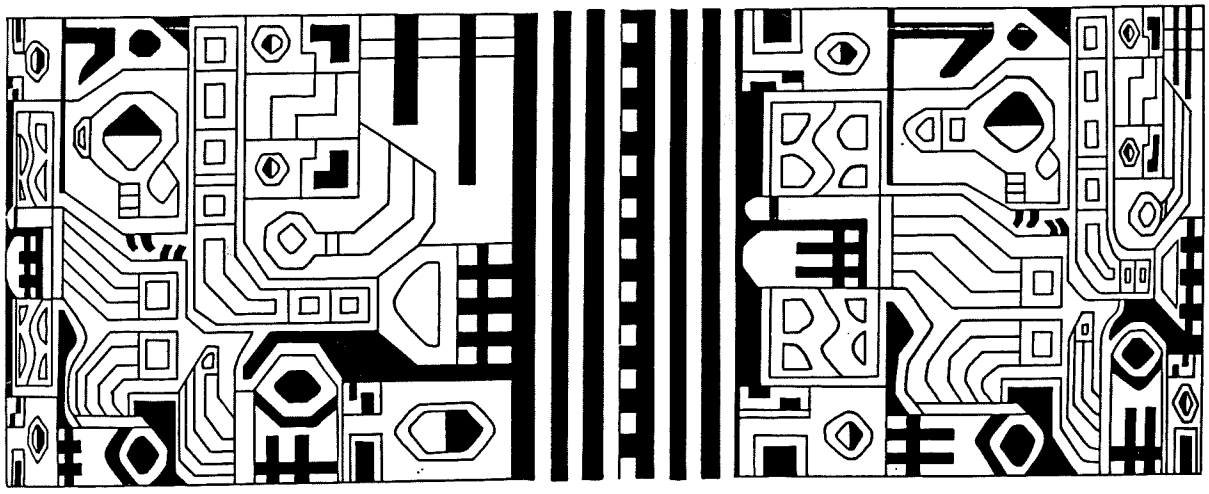
In Figure 1-c the same figure is shown as it appears in two different vertical bands on adjacent sides of the central seam of another Tiahuanaco tapestry shirt. This garment, like the one from which 1-b was drawn, has two full bands of motifs on each side of the shirt front. Note that elements are greatly expanded on the side towards the central seam, whereas the portions towards the outer edges of the garment are compressed. In addition, the motif itself is much more geometricized and simplified than 1-b. Four distinct vertical zones are now apparent which may be identified by their uppermost elements as the staff, head, headdress and wing. We should keep in mind that these zones correspond to the weft direction of the fabric. The expansion and compression therefore was accomplished by the simple expedient of adding or subtracting from the number of weft threads used to form the elements in a given zone. In each figure the two zones towards the central seam, which would normally form half the width of the figure, here account for two-thirds. A secondary application of the expansion-compression device, which elsewhere achieves a high degree of refinement, is noticeable in this rendering in its rudimentary form. I refer to the expansion and compression of motif elements within each zone reflecting the overall lateral distortion scheme of the complete motif. This becomes evident, for example, when the eye ornaments of the two figures are compared. This and other details convey the impression of a gradual increase in expansion or compression as we move horizontally across the figure. Further analysis

Figure 1 *Representation of falcon-headed, staff bearing figure motifs (Type III-A)*

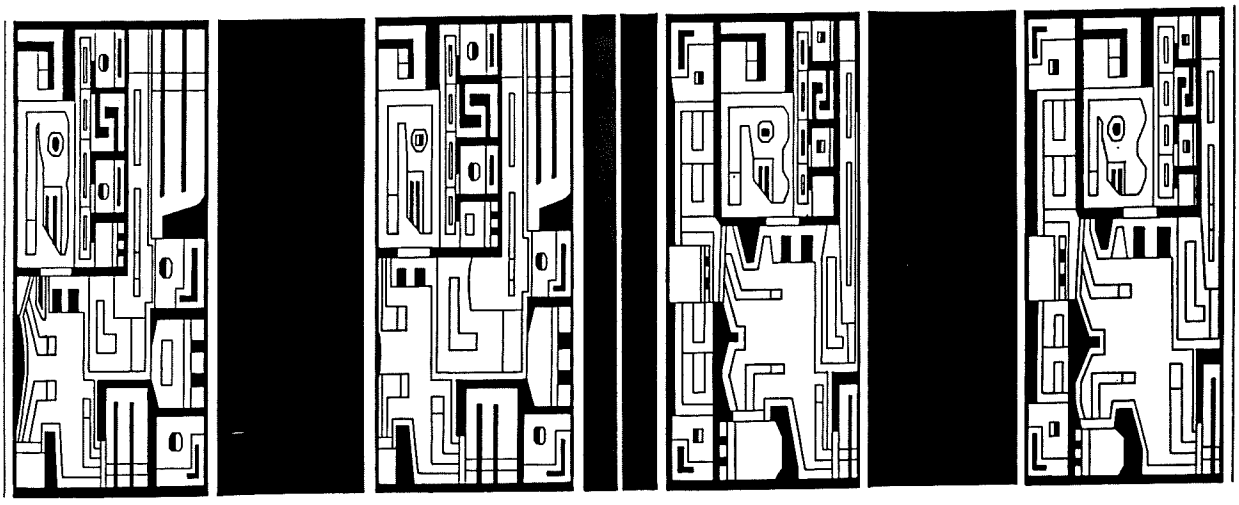
a. From the "Gateway of the Sun" at Tiahuanaco, Bolivia



b. T.M. 1959.5.6. Gift of Raymond Wielgus



c. T.M. 1961.24.1 Gift of John Wise



d. T.M. 1962.51.1 Gift of Junius B. Bird

proves, however, that this is not the case here but that the major distortion is effected through a more or less uniform widening or narrowing of each zone. There is a tendency to treat upper portions of the headdress and wing zone independently from the rear leg, foot and foot appendage elements below. Note that vertical relationships shift in the expanded and compressed versions, due no doubt to the greater complexity of the upper group.

Our third example, shown in Figure 1-d, is taken from a shirt having three bands of motifs to each side as well as the usual narrow band on the edge. Our drawing includes a central portion of a single register similar to that shown in 1-b, but in this case including two figures on each side of the central seam. In comparison to our previous example, the present motifs appear elongated. Actually, they are approximately the same height but have been subjected to an overall lateral compression to fit within narrow bands half the width of those in 1-c. The falcon-headed figures are now much more simplified and highly stylized than before.

In the figures on the right of 1-d which face the central seam, the first zone, that of the staff, is of about normal proportion. The second, including the head and body, is somewhat compressed, yet together with the staff accounts for nearly two-thirds of the width of the figure. The third, the headdress zone, is still further compressed especially on the right where the wing band and hind foot have been greatly simplified. The fourth zone of wing, tail and foot appendage has been entirely omitted. Moving to the left of the center seam we note that in the other two figures the opposite is true. The wing zone now nearest the center is present and in normal proportion. The headdress zone is compressed but complete, with the usual third toe restored to the hind foot. Finally, the head zone is even more compressed and on its extreme left the arm, knee and foot have been greatly simplified. As before, the final zone towards the outer seam, in this case the staff, is missing.

A comparison with our previous examples shows an advancement in stylization and distortion trends in this motif. There is an increasing reflection within zones of the expansion-compression convention affecting the entire figure and a greater tendency to treat the lower half of the figure independently from the upper. The weaver, faced with the problem of fitting the figure within a narrow band, has in this case eliminated the final most compressed zone in order to reduce the crowding of his motif. The slightly wider motifs which may be seen in Figure 7-c demonstrate that this device of omitting zones was not always used in three-band schemes. The manner in which a similar motif was treated within the broader bands of a two-band scheme is illustrated by our next example.

Two opposite facing versions of a puma-headed Type III-A motif are shown in Figure 3, as they appear in adjoining registers of the two bands on each half of another Tiahuanaco shirt. When measured by our stylization yardstick they prove to be roughly contemporary with those of Figure 1-d.

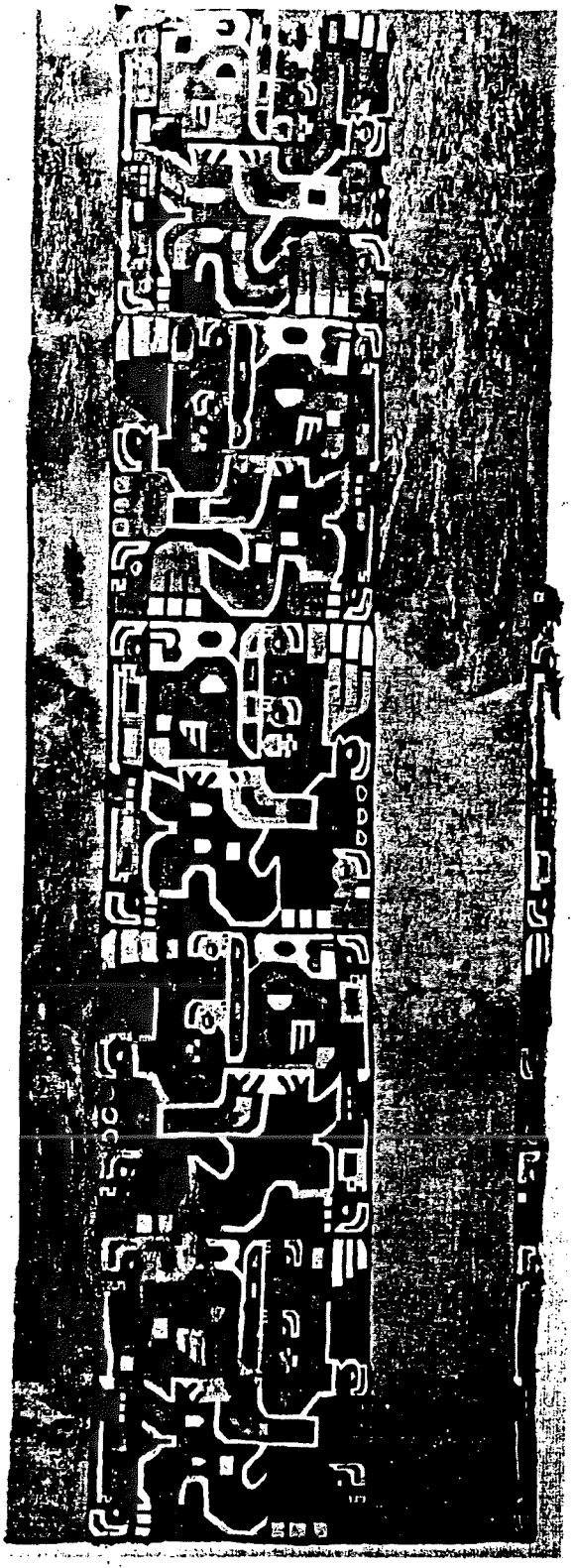


Figure 2 *Fragment of Tiahuanaco tapestry shirt, T.M. 1959.5.6. Gift of Raymond Wielgus*

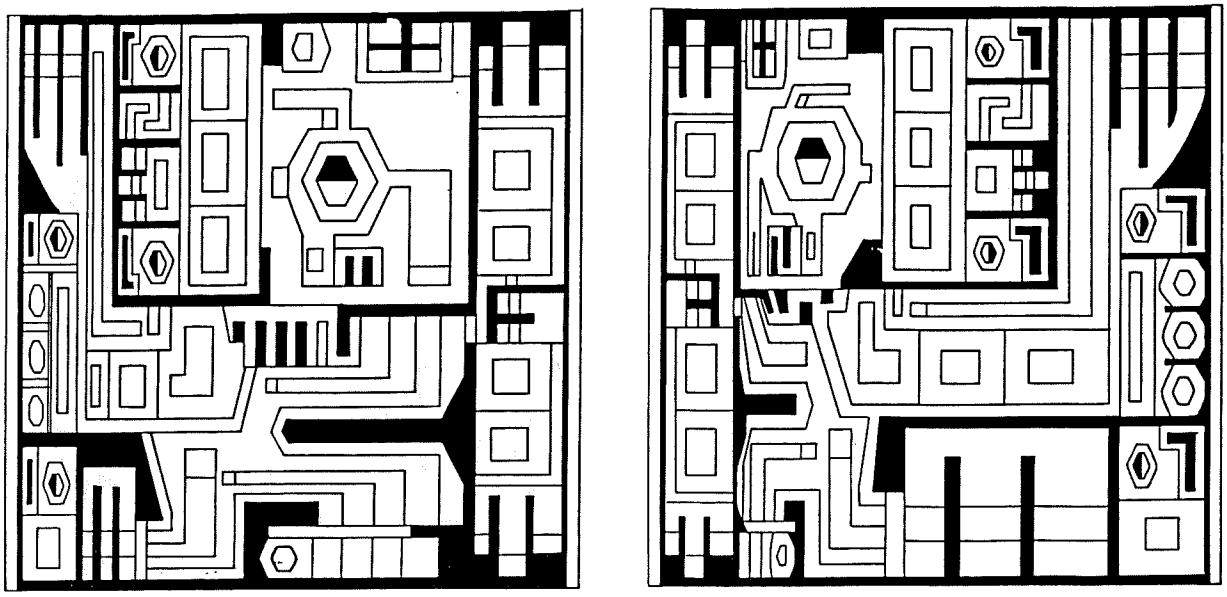


Figure 3 *Two puma-headed, staff bearing figure motifs from adjoining registers in Tiahuanaco shirt, T.M. 1962.30.2*

Unlike the latter, they do not lack their most compressed zones since the wider bands made their omission unnecessary. Each example, however, evinces a complex application of lateral distortion conventions in which expansion and compression of the staff and wing zones is less pronounced than in those of the head and headdress. This trait becomes most obvious in the wide motif of Figure 3. The independent lateral distortion treatment of the upper and lower portion of these central zones also becomes increasingly apparent in the wide band. Note for example that in Figure 3 both legs are found within the head zone where it is compressed, while the foreleg occupies the entire width of the same zone in the expanded version. The vertical alignments of the rear foot and its appendage are similarly dislocated. The secondary expansion and compression of elements within zones is also most evident in the wider motif. Comparison of these similar and more or less contemporary motifs serves to demonstrate the flexibility of conventions in adapting motifs to bands of different widths. To illustrate the full extent to which the trends we have observed ultimately developed we now turn to the last example in our selected series of motifs.

Alfredo Taullard illustrates a Tiahuanaco tapestry shirt in Plate 19 of his book *Tejidos y Ponchos Indigenas de Sudamerica* (Buenos Aires, 1949) which is said to have been found in Ayacucho (in the Southern Highlands of Peru) and is listed as the property of "Museo de Lima" (the National Museum of Archaeology and Anthropology?). The shirt has a characteristic Tiahuanaco design layout of single broad bands of alternating motifs on each half of the front with narrower partial bands along the side seams. The motifs themselves are made up of simplified geometric elements which become compressed within a narrow zone nearest the side seam. At this point resemblance to the Tiahuanaco motifs we have been discussing becomes difficult to see. A close analysis reveals that each alternate register includes a little less than half of a complete figure. In both versions, two zones, each with a secondary compression and expansion, are found with elements on the compressed side of the left hand zone omitted. In Figure 4 I will attempt to show visually how this motif may be reconstituted and resolved to its normal proportions in order to make it more readily identifiable and to demonstrate how the conventions have been applied.

At the top of Figure 4 I have placed the two versions of the Lima tapestry motif as they appear in adjacent registers of the broad band on the left half of the shirt front. For our convenience I have designated them A and B. Below these, I have reversed A and placed it next to B. We should now be able to recognize a highly abstract version of the same winged, puma-headed staff bearing figure which we encountered in Figure 3. The composite we have just created shows an exaggerated expansion of elements towards the sides and a compression in the center which has crowded out some components which normally appear there. To make our motif more recognizable I have next attempted to eliminate distortion caused by expansion and compression and supply the missing elements (indicated by shading). The space required by these omitted elements makes our result wider than the original band. While I have made some readjustments to compensate for horizontal shifts of components, I have not changed their vertical dimensions.

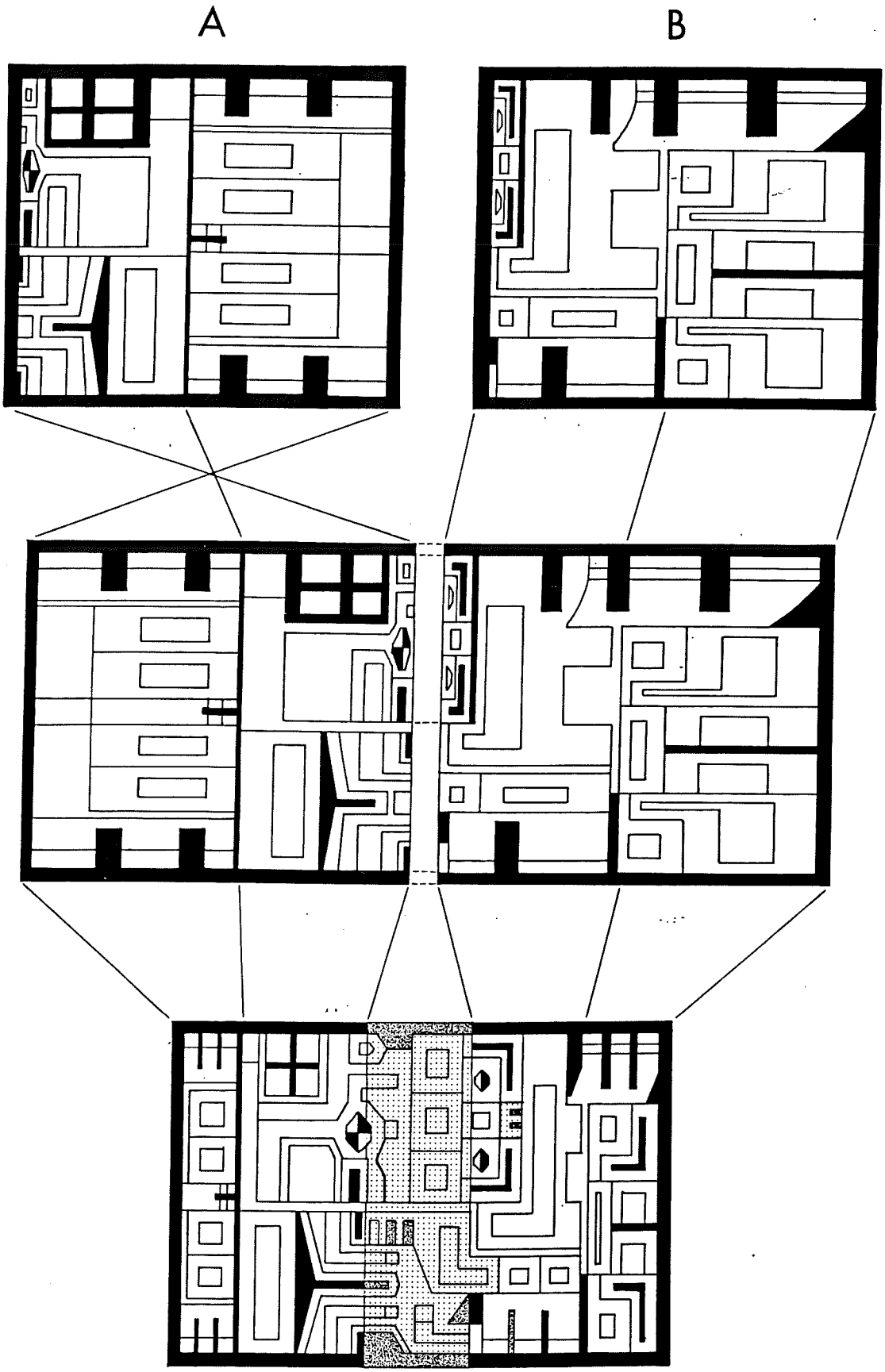


Figure 4 *Resolution of the puma-headed, staff bearing figure motif of the Lima tapestry*

In this tapestry both omission of zones and advanced stylization have been exploited for their own sake, creating two highly abstract patterns of geometric elements. A comparison with its less stylized equivalent in Figure 3 and with the motifs of Figure 1, gives us some understanding of the manner in which the abstraction was achieved.

The staff of the Lima motif occupying half the width of A possesses simplified equivalents of all the usual component elements, distorted by exaggerated expansion and secondary compression within the zone. The three feather elements at each end have all been made of equal length. The thumb and heel of the hand have been eliminated and only two fingers are shown, as in our comparative example, although as may be seen in Figure 1 there are usually three.

The head in A again retains all of its components in simplified form. The lower half of this zone, however, shows greater simplification and a pronounced dislocation of elements in relation to their normal vertical alignment with features of the head. Emphasis is placed on the T-shaped negative space silhouetting the arm and the leg, which is also prominent in the Figure 3 version. The arm, however, is no longer under the jaw or connected with the hand, and the forefoot is missing from its usual position. It now appears as a rectangle deliberately displaced to a position in front of the arm and leg. On the compressed side, a small L-shaped element is all that is left of the neck ornament characteristic of these figures, while the inverted L below delineates the back of the knee.

In B the zone at the left, representing the headdress zone, has undergone considerable transformation. The headdress band which should be found on the left side has been omitted but three of its ornaments are present. The upper and lower of these, identifiable by the L-shaped beak lines, may be seen to be bird heads when compared to other more detailed and less compressed renderings. The hollow square in the center represents a bird-tail headdress element with the feathers omitted. A fourth headdress ornament, present in most versions of the motif, has not been included. To the right of the headdress ornaments we find a broad vertical wing band with two projecting elements leading to components of the wing zone, a feature usually found only in earlier versions as in Figure 1-b. The two rectangular elements immediately below represent the tail band, in this case dislocated downward so that it does not coincide with the center of the tail as in less stylized renderings. It reflects a vertical dislocation tendency already present in the semi-abstract Figure 3 version. Like the headdress band, the portion of the tail band usually shown sweeping up toward it is missing. The simple elements in the bottom section of the zone represent a two-toed rear foot and its ankle band. The rear leg, along with the other elements on the compressed side of this zone, is missing.

The wing zone of the Lima motif compares easily with our more recognizable version. The three wing feathers can be seen at the top with one extending over the wing band projection already mentioned, which leads directly to the next component, a simplified bird head. The second projection of the wing band leads to a greatly simplified tail element with two, rather than the usual three, feathers. At the bottom of the zone we find a bird head foot appendage element as in all previous examples cited.

SUMMARY

The series of five tapestry motifs belonging to Type III-A which we have discussed suggest that a relative chronology may be manifested in a gradual evolution of stylization and abstraction coupled with an increasing application and growing complexity of lateral distortion conventions. It should be pointed out, however, that in attempting to make our demonstration of evolutionary trends understandable, we have been of necessity guilty of great oversimplification. We have bypassed many refinements and variations of iconography, stylization and distortion, which are present in the sequence, and we have completely ignored major factors such as the use of color and evolutionary trends in overall design, both of which become every bit as intricate as the ones we have discussed. Further and more detailed comparative analysis of all available examples of Tiahuanaco tapestry must be made before any but the broadest of trends can be proposed. Such a study may reveal that each of the different design categories we have cited has its own distinctive evolutionary trends. We may also find it possible to divide Tiahuanaco tapestries into groups representing different weaving centers, each with its own regional traits while conforming to the general evolutionary pattern. We must be prepared to recognize that considerable variation of motif treatment could exist at any given stage of style development, especially as conventions and their interrelationships became more highly complex.

Application

To demonstrate the kind of problems we will encounter in attempting to establish a relative chronological position for an individual tapestry, let us now consider the striking example shown in Figure 5 from the collection of the Museum of Primitive Art. It is a fragment representing most of the left half of a shirt front on which a single broad band of stylized motifs occupies nearly half of the warp and the partial band at the side seam is extremely narrow. The elements within the main motifs are broadly delineated in an expanded form, except for the extreme left where they become drastically compressed. The four complete motifs contained within the band alternate between what appear to be two distinct designs; actually, as in the Lima tapestry, there is but one motif involved which reverses direction by register. Again the degree of expansion and compression has been carried to such an extreme that the original motif is rendered almost unrecognizable to any one not familiar with the unusual conventions involved.

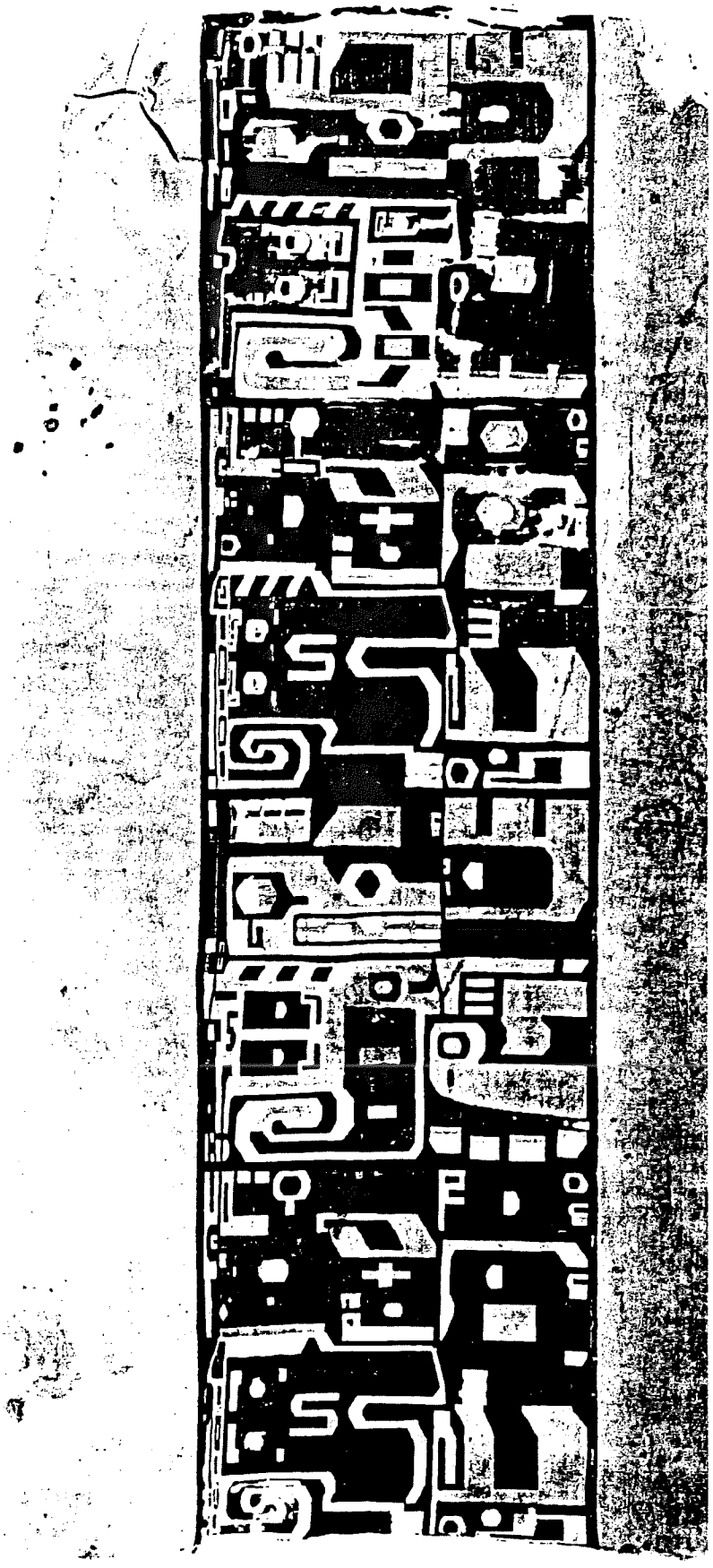


Figure 5 *Fragment of Tiahuanaco tapestry shirt, Museum of Primitive Art, 56.195*

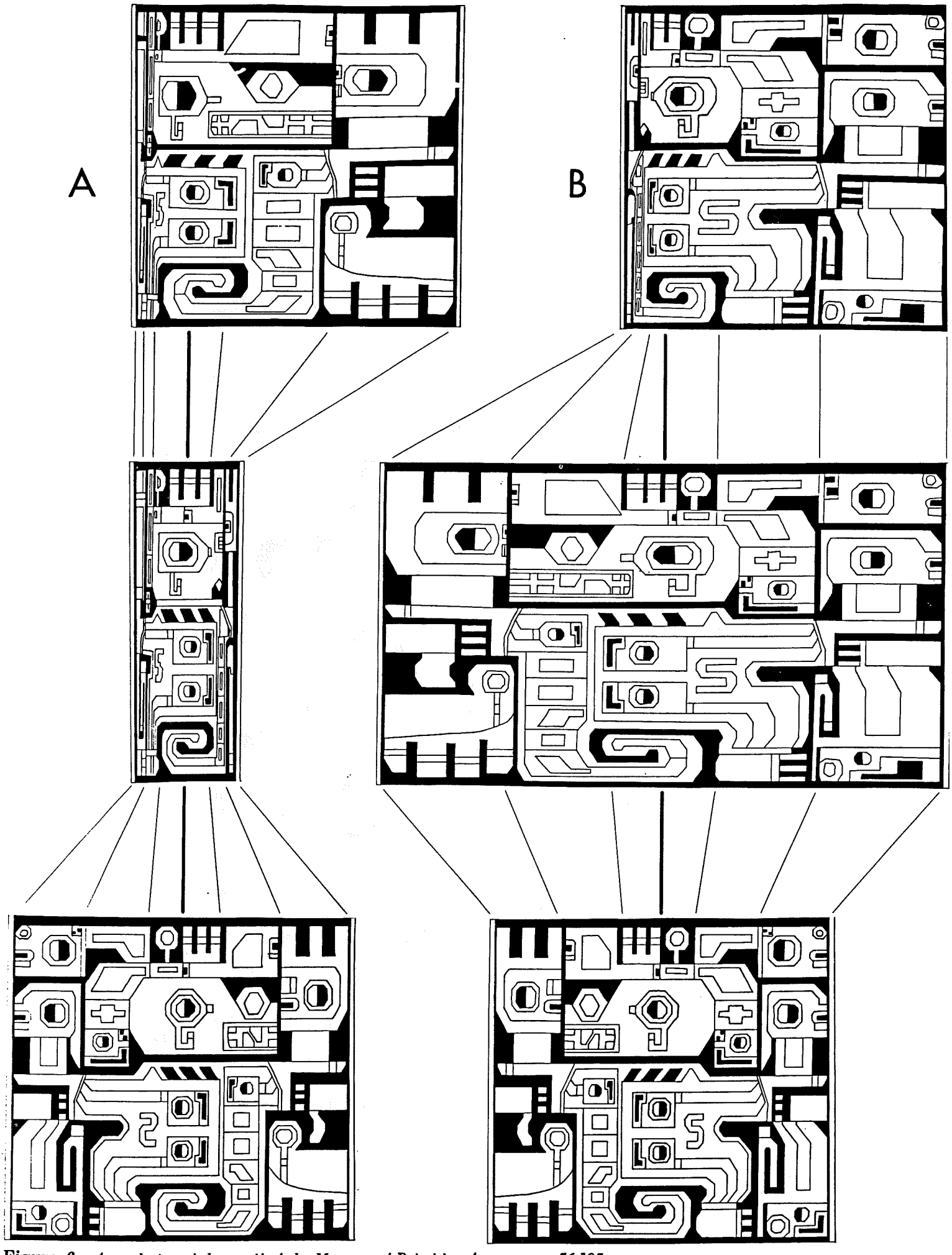


Figure 6 *A resolution of the motif of the Museum of Primitive Art tapestry, 56.195*

In Figure 6 I have attempted to resolve the distorted motif into recognizable form using variations of the same techniques as in the case of the Lima tapestry. At the top we see the two versions of the motif as they appear on the textile, marked A and B. After determining that the split eye is the actual center, I have combined the compressed portion of A with a reversed rendering of the compressed part of B and placed the result below A. Under B I have similarly combined the expanded portions of the two versions. The composite figures are now identifiable as greatly compressed and expanded renderings of an unusual Type III-B anthropomorphic feline figure, seemingly seated on its tail, its head turned backwards and arms outstretched holding staffs in each hand. By readjusting the expanded and compressed versions thus obtained to more normal proportions within the original width of the band, we achieve the theoretical undistorted motifs shown at the bottom of the figure.

Our reconstructions, though more recognizable than the original motifs appearing at top, exhibit an advanced degree of stylization. I have not been able to find equivalent examples of this motif, though a few related motifs showing similar stylization are to be found. None of the latter exhibits the same extreme application of lateral distortion but it would seem probable that they belong to the same period. If this is correct, it again demonstrates that considerable latitude existed in a given period as to the manner and degree to which distortion conventions were applied.

In our analysis and reconstruction of the motif it has become apparent that we are dealing with an ultimate degree of refinement in both the primary and secondary application of the lateral distortion convention. We also find fully developed the tendency to simplify elements greatly in compressed zones but without their omission as in the Lima tapestry and the narrow motif of Figure 1-d. Although the elaborate puma figure itself is not directly comparable to any of the others discussed, it would seem logical to assign the weaving to a chronological position between the two examples shown in Figure 1-d and Figure 3 on one hand, and the abstract Lima piece. If our proposed system of relative chronology is valid, this would place it rather late in the Tiahuanaco Empire period. The technical excellence, and the mastery of the subtle inter-relationships of intricate conventions governing iconography, stylization, lateral distortion, color and overall design organization, give eloquent testimony of the high level of artistic achievement which had been maintained by Tiahuanaco weavers throughout the long Tiahuanaco Empire period.

The Logic of Conventions

In this paper we have been concentrating our attention on the developmental trends of Tiahuanaco stylization and distortion without taking time to consider the obvious question of what logical purpose these and other conventions served. They appear to have been deliberately applied to counteract the twin dangers of monotony inherent in the severe simplicity of the garments themselves and the strict limits of the iconography they carried.

The flat sandwich board effect of the somewhat stiff finely woven shirt was overcome mainly by illusions of false perspective created by refinements in the design layouts and a related use of lateral distortion. In Figure 7-b we see the simplest of Tiahuanaco design schemes with one broad band of motifs to each half of the shirt front and a narrower band of partial motifs at each side seam. The plain weft stripe at the center is somewhat wider than those at the sides. The motifs in this case show no lateral distortion, although elements in the partial side bands are somewhat narrower. The total effect is to create the illusion of a cylindrical volume with the narrow side bands seen obliquely as they pass around the sides.

Illusions became more complex with the introduction of additional bands and the application of expansion and compression conventions. The shirt in Figure 7-a has a two-band scheme in which there is considerable application of lateral distortion. Again, we will note a progressive reduction in the widths of the plain weft stripes as they approach the sides, creating an illusion of volume. Lateral distortion tends to create an additional effect; that of a curved surface within bands, with the compressed zones of each motif occupying planes receding from the viewer. The overall illusion now is almost one of folds as they would appear on a draped column.

In Figure 7-c we see a shirt of three bands per side with stylization and lateral distortion more advanced than that of the previous two examples. A progressive narrowing in the width of both bands and plain stripes accentuates the volume effect. We noted earlier that the application of expansion and compression to the motifs at this stage of stylistic development (Figures 1-c and 3) gave emphasis to the central zones of the band while following the general rule of expansion of elements lying towards the center and compression of those on the side towards the edge of the garment. The draped fold illusion is heightened by this device.

It would be interesting if space permitted to attempt to plot diagramatically the solid form illusion created in each of the motifs we have studied. To do this with the motif of The Museum of Primitive Art shirt would require our imagining a figure somewhat wider than our composite expanded version with uniform expansion throughout its entire width. We would then need to visualize the solid form this motif would have to be applied to in order to recreate the effects present in the two actual versions on the tapestry which we designated A and B. In each case the expanded portions would be applied to two slight vertical folds to duplicate the illusion brought about by the secondary expansion and compression within each zone. In the central zone of the motif, the surface would bend away from us until we saw only the near sides of the two undulations occupied by the last two zones. In the

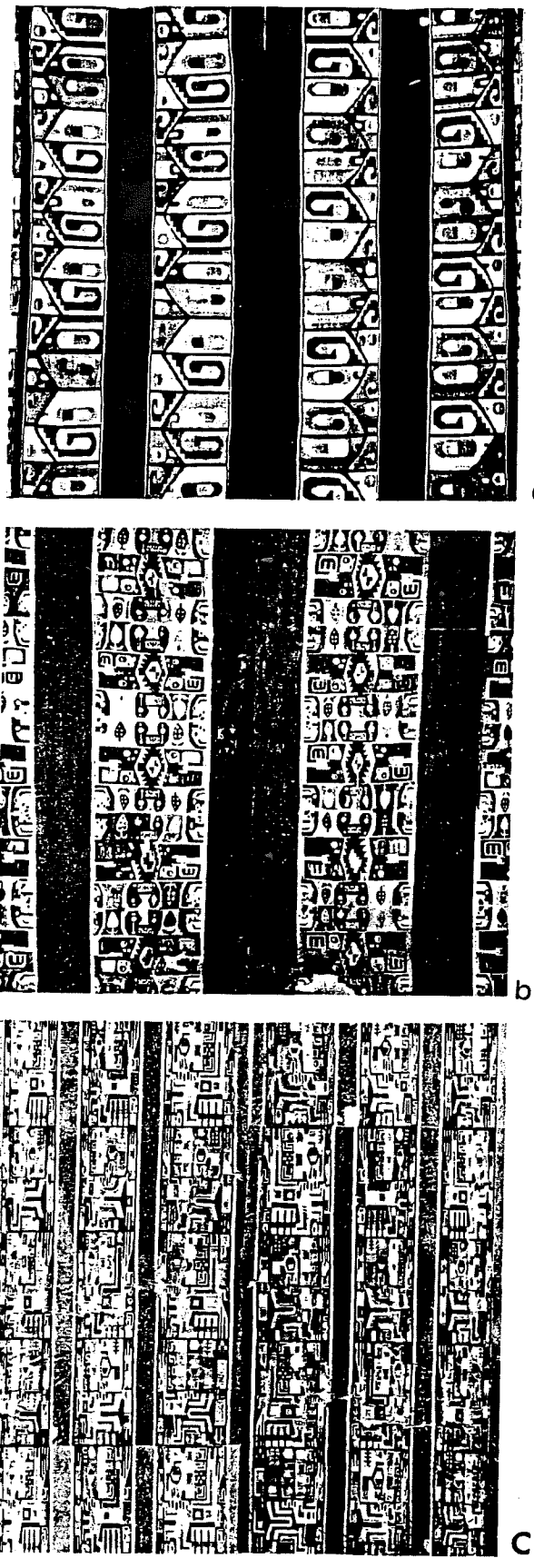


Figure 7 *Three Tiahuanaco tapestry shirts in the Textile Museum Collection:*

a. 1962.5.1 Two band shirt, Type I-B
b. 91.343 Single band shirt, Type II-A
c. 91.386 Three band shirt, Type III-A
(Photographic reconstruction from a large fragment)

Lima tapestry, and others in which zones have been eliminated, the illusory folds in the fabric are deeper with a portion of the motif disappearing from view.

Among the conventions used to counter the monotony threatened by the limitation of motifs on a garment to a single one or a related pair, lateral distortion played an important role. With the alteration of the direction of motifs by register, expansion and compression tended to accentuate their different appearance to the point that towards the end of the sequence they bore little resemblance to each other. The overall design of the shirt would still have suffered from geometric repetition if it were not for a skillful application of color variation. The simple sequence of color harmonies found in early shirts such as that shown in Figure 2 grew increasingly intricate with a tendency of the color juxtapositions to de-emphasize the motif, creating a kaleidoscopic pattern on the surface of the bands. Unfortunately, space prohibits our detailed examination here of this important aspect of Tiahuanaco design. Tiahuanaco weavers were great masters of color harmony who deftly exploited the sumptuous palette available to them in the wide range of natural golden yellows and browns of alpaca wool, amplified by use of a few dyes such as cochineal red and indigo blue. The infinite variety of effect conveyed by their tapestry shirts, in spite of the rigid limits imposed by conventions, gives eloquent proof of their creative genius.

CONCLUSION

Our preliminary study reveals that a relative chronology may be derived from a study of the gradual evolution and growth in complexity of Tiahuanaco tapestry design conventions. These conventions appear to have formed a logical system which allowed the weaver considerable flexibility in their combination and emphasis, enabling him to achieve a rich variety of effect while maintaining the distinctive appearance and symbolic meaning required of garments worn by the Tiahuanaco official class.